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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/764,012	01/23/2004	Wade Brown	CBOARD.001A	8951

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EXAMINER	
CHEVALIER, ALICIA ANN	
ART UNIT	**PAPER NUMBER**
1794	

NOTIFICATION DATE	DELIVERY MODE
01/07/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/764,012	BROWN, WADE	
	Examiner	Art Unit	
	Alicia Chevalier	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7-9,28-38,40-44 and 46-65* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-9,28-38,40-44 and 46-65* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/4/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

RESPONSE TO AMENDMENT

Request for Continued Examination

1. The Request for Continued Examination (RCE) under 37 CFR 1.53 (d) filed on November 30, 2007 is acceptable and a RCE has been established. An action on the RCE follows.

2. Claims 1-4, 7-9, 28-38, 40-44 and 46-65 are pending in the application, claims 5, 6, 10-27, 39 and 45 have been cancelled.

3. Amendments to the claims, filed on November 30, 2007, have been entered in the above-identified application.

REJECTIONS

4. **The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

Claim Rejections - 35 USC § 103

5. Claims 1-4, 7-9, 28-38, 40-44 and 46-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson et al. (U.S. Patent No. 3,830,776) in view of Weisman (U.S. Patent No. 4,439,548).

Regarding Applicant's claims 1, 2, 40, 42-47, 52-55 and 58-65, Carlson discloses a polymer composite material comprising only one polymer matrix, a foamed polyurethane (*col. 6,*

lines 58-62) and about 60 to about 85 wt %, more specifically 80-85 wt%, of an inorganic particulate material based on total weight of the composite material (*col. 2, lines 43-47*).

Carlson fails to disclose the claimed polyurethane.

Weisman discloses a foamed polyurethane, where the matrix consists pf a polyurethane and an optional polyisocyanurate, formed by reaction of a reaction mixture comprising one or more monomeric or oligomeric poly- or di-isocyanates, a first non-EO tipped polyol selected from the group consisting of polyether polyols and polyester polyols, the first polyol has a first hydroxyl number, and a second polyol selected from the group consisting of polyether polyols and polyester polyols, the second non-EO tipped polyol has a second hydroxyl number less than the first hydroxyl number (*col. 6, lines 27-53*). The polyurethane formed is deemed to be less rigid than a polyurethane that is formed with the second polyol, since Carlson discloses the claimed polyurethane composition. The second polyol is between about 5 wt% and about 20 wt% based on the total weight of the first and second polyols being 100 wt% (*col. 6, lines 27-53*). The polyurethane foam is flexible with good load bearing characteristics (*col. 4, lines 34-37*).

Carlson and Weisman are analogous because they both disclose foamed polyurethane for insulating, cushioning and shock-absorbing articles.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use Weisman's polyurethane composition as the polyurethane composition in Carlson in order to insure good load bearing characteristics.

Furthermore, the flexure strength of the composite is deemed to be at least 1929 psi, at least 2786 psi, at least 118,331 psi, at least 1319 psi, between 1319-1929 psi, and between 1319-1650 psi, since Carlson and Weisman disclosed the claimed composition.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the blowing agent water content to about 0.10 wt% to about 0.40 et%, based on the weight of the total polyol, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. MPEP 2144.05 (II).

The limitation "extruded" is a method limitation and does not determine the patentability of the product, unless the process produces unexpected results. The method of forming the product is not germane to the issue of patentability of the product itself, unless Applicant presents evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. MPEP 2113.

Regarding Applicant's claims 3, 4 and 41, Carlson discloses that the composition further comprises one or more inorganic fibers disposed throughout the polymer matrix (*col. 7, lines 10-21*). Carlson fails to disclose that the fibers are axially oriented fiber rovings. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to axially orient the fibers in order to improve the strength to the material. Carlson further disclose that the one or more inorganic fibers disposed in the polymer matrix are present in amount less than 10% by weight, based on the total weight of the material (*col. 7, lines 8-11*).

Regarding Applicant's claims 7-9 and 49, Carlson discloses that the inorganic particulate material is fly ash with a particle size distribution ranging from about 0.0625 in. to below about 325 mesh and contains less than about 0.5 wt% water (*col. 2, lines 43-47*).

Regarding Applicant's claims 28-30, 50, 51, 56 and 57, the composite of Carlson and Weisman are deemed to be self-skinning and have a density ranging from about 20 to about 90 lb./ft^3, more specifically 20 to about 60 lb./ft^3, more specifically 20 to about 41 lb./ft^3, and more specifically 31 to about 38 lb./ft^3, since Carlson and Weisman disclose all the limitations of the instant claimed invention.

Regarding Applicant's claims 31-36, Weisman discloses that the a polyisocyanurate formed by reaction of the monomeric or oligomeric poly- or di-isiocyanate with water. The monomeric or oligomeric poly- or di-isiocyanate comprises a methylene diphenyl diisocyanate (MDI). The MDI is deemed to have a viscosity ranging from about 25 to about 200 cp at 25 degrees C and has an NCO content ranging from about 30% to about 35% (*col. 6, lines 37-53*).

Regarding Applicant's claims 37 and 38, Weisman discloses that the ratio of isocyanates to polyols is from about 0.5:1 to about 1.5:1 or 0.8:1 to 1.1:1 (*col. 7, lines27-31*).

ANSWERS TO APPLICANT'S ARGUMENTS

6. Applicant's arguments in the response filed November 30, 2007 regarding the 35 U.S.C. 103(a) rejection over Carlson in view of Weisman of record have been carefully considered but are deemed unpersuasive.

Applicant argues that both Carlson and Weisman fail to teach or suggest that the composite material includes a single polymer matrix consisting of a polyurethane and an optional polyisocyanurate formed by reaction of multiple polyols with an isocyanate.

Applicant states Weisman discloses "the product formulation includes ... a mixture of polyol and polymer/polyol." As noted in col. 4, lines 55-56, "[p]olymer/polyols are characterized by the presence of polymer to polyol grafted species" In other words, Weisman's reaction mixture includes a polymer matrix which is reacted with the polyol to form a polymer/polyol matrix, prior to reaction of the polymer/polyol with the isocyanate to produce the polyurethane. Thus, Weisman fails to teach that the composite material consists of only one polymer matrix.

It is noted that Weisman is still forming a single polymer matrix, not a polymer mixed with a polyol. The fact that Weisman's matrix comprises a grafted polymer does not alter the fact that it consists of only one polyurethane modified matrix.

Applicant further states, Weisman also teaches that "polyvinyl chloride resin" is added into the reaction mixture. Weisman notes that "streams or tentacles of PVC ... interlace the entire cellular structure of the urethane to produce a three-dimensional skeletal network therein." Thus, Weisman teaches that its polyurethane networks (which consists of multiple polymer matrices as noted above) should also comprise a PVC polymer matrix. As such, Weisman fails to teach or suggest the limitation of Claim 1 that the only one polymer matrix consists of polyurethane and optional polyisocyanurate.

Weisman discloses that the polyvinyl chloride resin particles are used as an additive (*col. 7, line 65 through col. 8, line 6*). Applicant's claim merely limits the number of matrices, not the number of fillers or additive to the matrix. A matrix is material in which something is enclosed

or embedded and an additive is a substance added to another in relatively small amounts to effect a desired change in properties. Furthermore, it is clear that the polyvinyl chloride resin is enclosed/embedded in the foam matrix (*col. 8, lines 47-58*).

Applicant argues that Carlson teaches that the fly ash beads may be incorporated into a polymeric binder/polymer media such as a urethane binder and that Weisman teaches away from Carlson as it makes it clear that other polymer matrices beyond that of a polymeric binder are necessary to produce a product with the desired dielectric properties.

It is noted that Carlson further discloses that the polymer media can include foaming ingredients and other additive and filler (*col. 6, lines 58-61*). Carlson envisions using other additives. Therefore, one of ordinary skill in the art would look to references that use additives that improve the foam, like Weisman.

7. Applicant's arguments in response filed November 30, 2007 regarding claim 62 of record have been considered but are moot since the rejections have been withdrawn.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (571) 272-1490. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ac
12/31/07

ALICIA CHEVALIER
PRIMARY EXAMINER